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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,780

09/29/2003

Takashi Kanai

F-7987

2486

28107 7590 01/11/2007
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EXAMINER

COMAS, YAHVEH

ART UNIT

PAPER NUMBER

2834

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/673,780

Applicant(s)

KANAI ET AL.

Examiner

Yahveh Comas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claim 1-18 have been considered but are moot in view of the new ground of rejection.

Claim Objections

Claims 1-3, 6, 10, 12-15 are objected to because of the following informalities: Claims 1-3, 6, 10, 12-15 use the term "on" in order to describe an element that is surrounding another element, as disclosed by the specifications (for example claim 1: a sleeve on an outer circumferential part of said shaft). Examiner suggests the use of the term "surrounding" instead of "on" wherein the first element is not in close contact with the second element. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 12, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 16 and 17 disclose a color wheel attached to an outer circumferential part of said sleeve, however how the color wheel is attached to the sleeve when said sleeve is inside the rotor and the hub is not clearly disclosed in the specifications.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Obata et al. EP Patent NO. 1246182A2 in view of Asai et al. U.S. patent No. 6,074,098.

Obata discloses a base (7), a sleeve (8) projecting upwardly and downwardly from the base (7) at a point adjacent a central portion of said base a portion of said sleeve being surrounded by said base (7), a shaft positioned in said sleeve (8), a gas volume, between said shaft (3) and said sleeve (8), defining an aerodynamic bearing, a rotor (11) on an outer circumferential part of said sleeve (8), a plurality of permanent magnets on said rotor (11), and a coil (15) surrounding an outer circumferential part of said rotor (11). Obata disclose the claimed invention except for a first magnet attached to a concavity of an upper part of said hub, said first magnet being a thrust magnet; and

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a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet. However, Asai disclose the use of a first magnet attached to a concavity of an upper part of said hub, said first magnet being a thrust magnet; and a second magnet attached to an upper portion of said shaft in order to provide a thrust bearing in the axial direction.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide a first magnet attached to a concavity of an upper part of said hub, said first magnet being a thrust magnet; and a second magnet attached to an upper portion of said shaft as disclosed by Asia since that would had been desirable in order to provide a thrust bearing in the axial direction.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka U.S. Patent No. 5,683,183 in view of Asai et al. U.S. patent No. 6,074,098.

Tanaka discloses a base (4b), a shaft (3) projecting from said base at a point adjacent a central portion of said base, a sleeve (4a) surrounding an outer circumferential part of said shaft (3), separated from said shaft only by a gas volume, a coil (7b) disposed on said base, said coil (7b) surrounding an outer circumferential part of said sleeve (4a), said coil (7b) being disposed axially collinear with said sleeve (4a), a rotor on an outer circumferential part of said coil (7b), a plurality of permanent magnets on said rotor, and a hub (20) supporting an upper portion of said sleeve (4a) and said rotor (7a), said hub surrounding an upper portion of said shaft (3) and an outer circumferential part of said rotor (7a) (see fig. 8). Tanaka disclose the claimed invention except for a first magnet attached to a concavity of an upper part of said hub, said first

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magnet being a thrust magnet; and a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet. However, Asai disclose the use of a first magnet attached to a concavity of an upper part of said hub, said first magnet being a thrust magnet; and a second magnet attached to an upper portion of said shaft in order to provide a thrust bearing in the axial direction.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide a first magnet attached to a concavity of an upper part of said hub, said first magnet being a thrust magnet; and a second magnet attached to an upper portion of said shaft as disclosed by Asia since that would had been desirable in order to provide a thrust bearing in the axial direction.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Obata et al. EP Patent NO. 1246182A2 in view of Asai et al. U.S. patent No. 6,074,098 in further view of Ackermann et al. U.S. Patent No. 5,714,828.

Obata in view of Asai disclose the claimed invention except for a back yoke attached to said hub, such that said back yoke is positioned around an outer circumferential part of said coil. However, Ackermann disclose the use of a stator having a coreless waveform wherein the coil configuration is free from soft-magnet pans and is externally surrounded with a sleeve-shaped soft-iron yoke in order to reduce the acoustic noise, mechanical vibrations and speed fluctuations and increase the starting torque.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Obata's invention and provide a back yoke is positioned

around an outer circumferential part of said coil as disclosed by Ackermann since that would had been desirable to reduce the acoustic noise, mechanical vibrations, speed fluctuations and increase the starting torque.

Claim 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable Obata et al. EP Patent NO. 1246182A2 in view of Asai et al. U.S. patent No. 6,074,098 in view of Ackermann et al. U.S. Patent No. 5,714,828 and in further view of Sung et al. 6,618,214.

Obata in view of Ackermann and Asai discloses the claimed invention except for a color wheel attached to one of the hub and back yoke. However, Sung discloses a color wheel attached to one of the rotor for use in a projection display system.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Yamamoto's invention and provide a color wheel attached to one of the rotor hub as disclosed by Sung since that would had been desirable to use said color wheel in a projection display system.

Claim 6-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obata et al. EP Patent NO. 1246182A2 in view of Asai et al. U.S. patent No. 6,074,098 in view of Ackermann et al. U.S. Patent No. 5,714,828 and in further view of Sung et al. 6,618,214.

Obata in view of Ackermann, Asai and Sung, discloses the claimed invention except for a first magnet attached to a concavity of an upper part of said shaft and a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet. However Asai discloses a first magnet attached to a concavity of an

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upper part of said shaft and a second magnet attached to an upper portion of said shaft in order to provide a magnetic bearing in the axial direction.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Obata's invention and provide first magnet attached to a concavity of an upper part of said shaft and a second magnet attached to an upper portion of said shaft in order to provide a magnetic bearing in the axial direction.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obata et al. EP Patent NO. 1246182A2 in view of Ackermann et al. U.S. Patent No. 5,714,828, in view of Sung et al. 6,618,214.

Obata discloses the claimed invention except a back yoke surrounding a circumferential part of the coil, a color wheel attached to one of the hub and back yoke, and a first magnet attached to a concavity of an upper part of said shaft and a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet.

However, Ackermann disclose the use of a stator having a coreless waveform wherein the coil configuration is free from soft-magnet pans and is externally surrounded with a sleeve-shaped soft-iron yoke in order to reduce the acoustic noise, mechanical vibrations and speed fluctuations and increase the starting torque.

However, Sung discloses a color wheel attached to one of the rotary portion for use in a projection display system.

However Asai discloses a first magnet attached to a concavity of an upper part of said shaft and a second magnet attached to an upper portion of said shaft in order to provide a magnetic bearing in the axial direction.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Obata's invention and provide a back yoke surrounding a circumferential part of the coil as disclosed by Ackermann, a color wheel attached to one of the rotor hub as disclosed by Sung since that would had been desirable to reduce the acoustic noise, use said color wheel in a projection display system, and provide first magnet attached to a concavity of an upper part of said shaft and a second magnet attached to an upper portion of said shaft in order to provide a magnetic bearing in the axial direction.

Conclusion

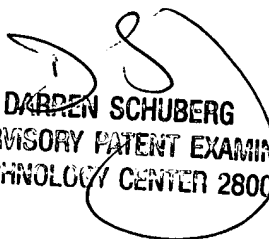
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yahveh Comas whose telephone number is 570-272-2020. The examiner can normally be reached on 8:00am-5:00pm M-T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YC


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